

What is claimed is:

1. A reforming apparatus that generates hydrogen from fuel, comprising:
a plurality of reactors each having an internal space and reacting fuel in the internal space;
- 5 a heat insulating package that contains the plurality of reactors; and
a heat insulator that supports the plurality of reactors to be separated from an inner wall of the heat insulating package.
2. The reforming apparatus according to claim 1, wherein at least one support member that supports the plurality of reactors to be spaced from one another is disposed
10 between adjacent reactors among the plurality of reactors.
3. The reforming apparatus according to claim 2, wherein a passage hole is formed on the support member and the internal spaces of the plurality of reactors communicate with one another through the passage hole.
4. The reforming apparatus according to claim 1, wherein the plurality of
15 reactors includes a first evaporator that evaporates a liquid mixture of fuel and water, a reformer that reforms the liquid mixture of fuel and water evaporated by the first evaporator to a gaseous mixture containing hydrogen gas, and a carbon monoxide remover that reacts carbon monoxide contained in the gaseous mixture to remove carbon monoxide, and the first evaporator, and the carbon monoxide remover and the reformer
20 are stacked in order upwardly from the heat insulator.
5. The reforming apparatus according to claim 1, further comprising a combustor corresponding to at least one of the plurality of reactors.
6. The reforming apparatus according to claim 4, further comprising a second evaporator that evaporates fuel, and a combustor that burns fuel evaporated by the second
25 evaporator, wherein the second evaporator, the first evaporator, the first combustor, the carbon monoxide remover, the second combustor, the reformer, and a third combustor are stacked in order upwardly from the heat insulator.

7. The reforming apparatus according to claim 6, further comprising:
a first support member that is disposed between the second evaporator and the first evaporator to support the second evaporator and the first evaporator to be separated from each other;
- 5 a second support member that is disposed between the first combustor and the carbon monoxide remover to support the first combustor and the carbon monoxide remover to be separated from each other; and
a third support member that is disposed between the second evaporator and the reformer to support the second evaporator and the reformer to be separated from each
10 other.
8. The reforming apparatus according to claim 1, wherein a radiation- reflecting layer is formed on an inner wall of the heat insulating package.
9. The reforming apparatus according to claim 8, wherein the radiation- reflecting layer is formed of at least one of Au, Ag, and Al.
- 15 10. The reforming apparatus according to claim 1, wherein pressure of the internal space in the heat insulating package is set to 1 Pa or less.
11. The reforming apparatus according to claim 1, wherein the internal space of the heat insulating package is filled with an inert gas selected from methane containing fluorine, polyhalogenated derivative gas of ethane and carbon dioxide.
- 20 12. The reforming apparatus according to claim 1, wherein the internal space of any one of the plurality of reactors is partially shaped like a winding passage.
13. The reforming apparatus according to claim 7, wherein a passage hole is formed that leads to the internal space of the second evaporator from the passage outside the heat insulating package through the heat insulating package and the heat insulator.
- 25 14. A reforming apparatus that generates hydrogen from fuel comprising:
a reformer that reforms fuel in an internal space;
an evaporator that evaporates fuel in an internal space; and

a heat propagating section disposed between the reformer and the evaporator to propagate heat of the reformer to the evaporator.

15. The reforming apparatus according to claim 14, wherein the heat propagating section is a carbon monoxide remover.

5 16. The reforming apparatus according to claim 14, wherein at least one support member is disposed among the reformer, the evaporator, and the heat propagating section.

17. The reforming apparatus according to claim 16, wherein a passage hole is formed on the support member and the internal spaces of the reformer and the evaporator communicate with each other through the passage hole.

10 18. A reforming apparatus that generates hydrogen from fuel comprising a plurality of reactors each having a continuous space in its interior and being stacked to react fuel sequentially, wherein the plurality of reactors is heat-insulated as a whole and the reactors are arranged in order of operating temperature to allow heat transmission to the adjacent reactor, respectively.